

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 July 2005 (14.07.2005)

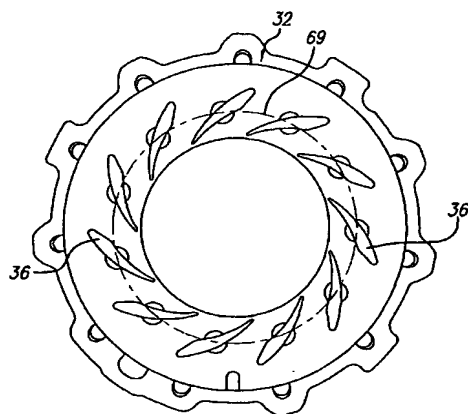
PCT

(10) International Publication Number
WO 2005/064121 A1

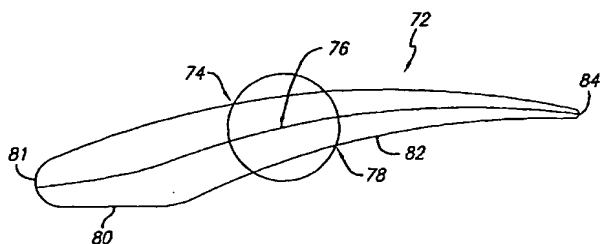
- (51) International Patent Classification⁷: F01D 17/16, F02C 6/12
- (21) International Application Number: PCT/EP2003/015034
- (22) International Filing Date: 31 December 2003 (31.12.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (71) Applicant (for all designated States except US): HONEYWELL INTERNATIONAL, INC. [US/US]; 101 Columbia Road, Morristown, NJ 07962 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): CASTAN, Joel, P. [FR/FR]; 7, avenue de la république, F-88000 Epinal (FR).
- (74) Agent: CABINET HIRSCH & ASSOCIES; 58 Avenue Marceau, F-75008 Paris (FR).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: CAMBERED VANE FOR USE IN TURBOCHARGERS



(57) Abstract: Cambered vanes of this invention are constructed for use within a vaned turbocharger and comprise an inner airfoil surface oriented adjacent a turbine wheel, and an outer airfoil surface oriented opposite the inner airfoil surface. The inner and outer airfoil surfaces define a vane airfoil thickness. A cambered vane leading edge or nose is positioned along a first inner and outer airfoil surface junction, and a vane trailing edge positioned along a second inner and outer surface junction. The vane inner and outer airfoil surfaces are specially configured to provide a vane camberline having a curved section. Specifically, the vane camberline curved section has a measure of curvature which is defined within a degree of tolerance by a vane placement or pivot diameter, as generally measured between diametrically opposed vanes mounted in the turbocharger, for providing improved gas flow distribution, thereby increasing the effective operating range of the turbocharger.





Declaration under Rule 4.17:

— *of inventorship (Rule 4.17(iv)) for US only*

Published:

— *with international search report*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.